

IN THE UNITED STATES PATENT  
AND TRADEMARK OFFICE

Applicant: JAUDOUIN et al.

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For: A RUNNER FOR A VEHICLE SEAT  
AND A SYSTEM FOR A VEHICLE  
INCLUDING A SEAT EQUIPPED WITH  
SUCH A RUNNER

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)  
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**PRELIMINARY AMENDMENT**

Commissioner for Patents  
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Washington, D.C. 20231

Sir:

Preliminary to examination on the merits, please amend the above-identified  
application as follows:

**In the Claims and Abstract:**

Please amend claims 1-13 and the Abstract as follows:

Clean Version of Claims

1. (Amended) A runner for a vehicle seat, the runner comprising a male bar and a female bar that are mounted to move relative to each other over a predetermined stroke, the runner further comprising a detector disposed on one of the male and female bars, and a detectable member disposed on the other of the male and female bars, the detector being adapted to detect the presence of the detectable member while said detectable member is situated in a first fraction of said stroke and the absence of said detectable member while said detectable member is situated in a second fraction of the stroke, the first and second fractions together defining the entire stroke of the male and female bars relative to each other;

    said runner being characterized in that:

    the male bar is a generally channel section bar comprising a horizontal web from which two substantially vertical side flanges extend that are extended outwards by lips, each lip being provided with an edge;

    the female bar is a generally channel section bar comprising a horizontal web from which two side walls extend, each of which is formed by a substantially vertical flange which is extended by a flange lip extending inwards and down towards the web of said female bar, the lips of the male bar being received between the vertical flanges and the lips of the female bar, and the lips of the female bar being received between the vertical flanges and the lips of the male bar;

    the detectable member is formed by a tab that is integral with or secured to the edge of one of the lips of the male bar; and

    the corresponding side wall of the second bar has an opening disposed in correspondence with the detector adapted to detect the presence or the absence of the tab of the male bar.

2. (Amended) A runner according to claim 1, in which at least part of the detector is disposed in the opening in the side wall of the female bar.

3. (Amended) A runner according to claim 1, in which the tab extends longitudinally between two ends, and the corresponding side wall of the second bar, which wall is provided with the opening, extends between two ends, each of which is provided with an abutment element serving to co-operate with the ends of the tab to define said predetermined stroke over which the male and female bars move relative to each other.

4. (Amended) A device according to claim 1, in which the detector comprises:

firstly an elastically-deformable member having a first end secured to the side wall of the female bar, and a free second end disposed in the opening of the female bar and in the vicinity of the edge of the male bar, the tab of the male bar being disposed to move said free end by deforming the elastically-deformable member when said tab is facing the detector; and

secondly, a sensor suitable for detecting deformation of the elastically-deformable member when the tab of the male bar moves the free end of said elastically-deformable member.

5. (Amended) A runner according to claim 4, in which the sensor is mounted on a support member that is fixed removably to the side wall of the female bar, said sensor being disposed facing the opening of the female bar.

6. (Amended) A runner according to claim 1, in which the detector comprises:

firstly, a pivotally-mounted element having one end mounted to pivot on a separate support member mounted on the female bar, and a free end disposed in the opening in the female bar and in the vicinity of the edge of the male bar, the tab of the male bar being disposed to cause the free end of the pivotally-mounted element to pivot when said tab is facing the detector; and

secondly, a sensor mounted on the support member, the sensor being suitable for detecting pivoting of the pivotally-mounted element.

7. (Amended) A runner according to claim 1, in which the detector comprises:

at least one magnetic member and excitation means for generating a magnetic field in said magnetic member, said magnetic member and the excitation means being received, at least in part, in the opening in the female bar, so as to co-operate with the tab to define a magnetic circuit while said tab is present facing said magnetic member, said tab being made of a material that is also magnetic; and

a Hall-effect probe secured to the magnetic member, said probe being organized to deliver a signal at least when said tab is facing the magnetic member by closing the magnetic circuit.

8. (Amended) A runner according to claim 7, in which the detector is fixed to a support member that is mounted on the side wall of the female bar by clipping.

9. (Amended) A runner according to claim 8, in which the support member is a generally channel section member comprising:

an intermediate plate on which the detector is mounted by being received in the opening provided in the vertical flange of the female bar;

an end plate which extends from the intermediate plate and which has a shape complementary to the shape of the lip of said female bar; and

two clipping fingers which extend from the intermediate plate, the two clipping fingers being engaged in holes provided in a wedge zone situated between the web of the female bar, and the corresponding vertical flange of the female bar.

10. (Amended) A runner according to claim 9, in which the support member further comprises a fold-over element which connects to the intermediate plate and which serves to be folded over between the two clipping fingers and against the wedge zone of the female bar, so as to lock the support member onto the female bar after the clipping fingers have been engaged in the corresponding holes.

11. (Amended) A vehicle seat including a seat proper supported by at least one runner according to claim 2.

12. (Amended) A system for a vehicle, said system being characterized in that it comprises:

a vehicle seat according to claim 11;

at least one actuator device having two operating modes; and

a control device connected to the detector of the runner and suitable for causing the actuator device to operate selectively in one or other of its two operating modes depending on the position of the seat relative to the floor of the vehicle as detected by the detector of the runner.

13. (Amended) A system according to claim 12, in which the actuator device is an airbag disposed to protect an occupant of the seat in the event of an accident, and the control device is adapted to inflate the airbag in the event of an accident.

Clean Version of Abstract

The present invention relates to a runner for a vehicle seat, the runner comprising a male bar and a female bar that are mounted to move relative to each other over a predetermined stroke, the runner further comprising a detector disposed on one of the male and female bars, and a detectable member disposed on the other of the male and female bars. The male bar is a generally channel section bar including a horizontal web, the female bar is a generally channel section bar including a horizontal web, and the detectable member is formed by a tab that is integral with or secured to the edge of one of the lips of the male bar, the corresponding side wall of the second bar having an opening disposed in correspondence with the detector adapted to detect the presence or the absence of the tab of the male bar.

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Remarks

Claims 1-13 and the abstract have been amended to eliminate reference numerals and letters therefrom and claims 3, 4, 6, 7 and 11 have been further amended to eliminate multiple dependencies. None of the claims has been narrowed by this amendment.

Attached hereto as pages 7-11 is a marked-up version of the changes made to the claims and abstract by the current amendment.

Respectfully submitted,

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Version with Markings to Show Changes Made

Claims 1-13 have been amended as follows:

1. (Amended) A runner for a vehicle seat, the runner comprising a male bar and a female bar that are mounted to move relative to each other over a predetermined stroke [(L)], the runner further comprising a detector [(18)] disposed on one of the male and female bars, and a detectable member [(94)] disposed on the other of the male and female bars, the detector [(18)] being adapted to detect the presence of the detectable member [(94)] while said detectable member is situated in a first fraction [(P<sub>1</sub>)] of said stroke [(L)] and the absence of said detectable member [(94)] while said detectable member is situated in a second fraction [(P<sub>2</sub>)] of the stroke [(L)], the first and second fractions [(P<sub>1</sub>, P<sub>2</sub>)] together defining the entire stroke [(L)] of the male and female bars relative to each other;

    said runner being characterized in that:

    the male bar [(9)] is a generally channel section bar comprising a horizontal web [(91)] from which two substantially vertical side flanges [(92)] extend that are extended outwards by lips [(93)], each lip [(93)] being provided with an edge [(93b)];

    the female bar [(8)] is a generally channel section bar comprising a horizontal web [(81)] from which two side walls [(8a)] extend, each of which is formed by a substantially vertical flange [(82)] which is extended by a flange lip [(83)] extending inwards and down towards the web [(81)] of said female bar [(8)], the lips [(93)] of the male bar [(9)] being received between the vertical flanges [(82)] and the lips [(83)] of the female bar [(8)], and the lips [(83)] of the female bar [(8)] being received between the vertical flanges [(92)] and the lips [(93)] of the male bar [(9)];

    the detectable member is formed by a tab [(94)] that is integral with or secured to the edge [(93b)] of one of the lips [(93)] of the male bar; and

    the corresponding side wall [(8a)] of the second bar [(8)] has an opening [(86)] disposed in correspondence with the detector [(18)] adapted to detect the presence or the absence of the tab [(94)] of the male bar [(9)].

2. (Amended) A runner according to claim 1, in which at least part of the detector [(18)] is disposed in the opening [(86)] in the side wall [(8a)] of the female bar.

3. (Amended) A runner according to claim 1 [or 2], in which the tab [(94)] extends longitudinally between two ends [(94a, 94b)], and the corresponding side wall [(8a)] of the second bar [(8)], which wall is provided with the opening, extends between two ends, each of which is provided with an abutment element serving to co-operate with the ends [(94a, 94b)]

of the tab [(94)] to define said predetermined stroke [(L)] over which the male and female bars move relative to each other.

4. (Amended) A device according to [any one of claims 1 to 3] claim 1, in which the detector [(18)] comprises:

firstly an elastically-deformable member [(20)] having a first end [(20a)] secured to the side wall [(8a)] of the female bar [(8)], and a free second end [(20b)] disposed in the opening [(86)] of the female bar and in the vicinity of the edge [(93b)] of the male bar [(9)], the tab [(94)] of the male bar being disposed to move said free end [(20b)] by deforming the elastically-deformable member [(20)] when said tab is facing the detector; and

secondly, a sensor [(21)] suitable for detecting deformation of the elastically-deformable member [(20)] when the tab [(94)] of the male bar [(9)] moves the free end [(20b)] of said elastically-deformable member [(20)].

5. (Amended) A runner according to claim 4, in which the sensor [(21)] is mounted on a support member [(19)] that is fixed removably to the side wall [(8a)] of the female bar [(8)], said sensor [(21)] being disposed facing the opening [(86)] of the female bar [(8)].

6. (Amended) A runner according to [any one of claims 1 to 3] claim 1, in which the detector [(18)] comprises:

firstly, a pivotally-mounted element [(34)] having one end mounted to pivot on a separate support member [(30)] mounted on the female bar [(8)], and a free end disposed in the opening [(86)] in the female bar and in the vicinity of the edge [(93b)] of the male bar [(9)], the tab [(94)] of the male bar [(9)] being disposed to cause the free end of the pivotally-mounted element [(34)] to pivot when said tab [(94)] is facing the detector [(18)]; and

secondly, a sensor mounted on the support member [(30)], the sensor being suitable for detecting pivoting of the pivotally-mounted element [(34)].

7. (Amended) A runner according to [any one of claims 1 to 3] claim 1, in which the detector [(18)] comprises:

at least one magnetic member [(23)] and excitation means [(24)] for generating a magnetic field in said magnetic member [(23)], said magnetic member [(23)] and the excitation means [(24)] being received, at least in part, in the opening [(86)] in the female bar, so as to co-operate with the tab [(94)] to define a magnetic circuit while said tab is present facing said magnetic member [(23)], said tab [(94)] being made of a material that is also magnetic; and

a Hall-effect probe [(25)] secured to the magnetic member [(23)], said probe [(25)] being organized to deliver a signal at least when said tab [(94)] is facing the magnetic member [(23)] by closing the magnetic circuit.

8. (Amended) A runner according to claim 7, in which the detector [(18)] is fixed to a support member [(40)] that is mounted on the side wall [(8a)] of the female bar [(8)] by clipping.

9. (Amended) A runner according to claim 8, in which the support member [(40)] is a generally channel section member comprising:

an intermediate plate [(41)] on which the detector [(18)] is mounted by being received in the opening [(86)] provided in the vertical flange [(82)] of the female bar;

an end plate [(42)] which extends from the intermediate plate [(41)] and which has a shape complementary to the shape of the lip [(83)] of said female bar [(8)]; and

two clipping fingers [(43)] which extend from the intermediate plate [(41)], the two clipping fingers [(43)] being engaged in holes [(88)] provided in a wedge zone [(87)] situated between the web [(81)] of the female bar, and the corresponding vertical flange [(82)] of the female bar.

10. (Amended) A runner according to claim 9, in which the support member [(40)] further comprises a fold-over element [(44)] which connects to the intermediate plate [(41)] and which serves to be folded over between the two clipping fingers [(43)] and against the wedge zone [(87)] of the female bar [(8)], so as to lock the support member [(40)] onto the female bar after the clipping fingers [(43)] have been engaged in the corresponding holes [(88)].

11. (Amended) A vehicle seat including a seat proper [(3)] supported by at least one runner [(7)] according to [any one of claims 2 to 10] claim 2.

12. (Amended) A system for a vehicle, said system being characterized in that it comprises:

a vehicle seat [(2)] according to claim 11;

at least one actuator device [(10)] having two operating modes; and

a control device [(15)] connected to the detector [(18)] of the runner and suitable for causing the actuator device [(10)] to operate selectively in one or other of its two operating

modes depending on the position of the seat [(2)] relative to the floor of the vehicle as detected by the detector [(18)] of the runner.

13. (Amended) A system according to claim 12, in which the actuator device [(10)] is an airbag disposed to protect an occupant of the seat in the event of an accident, and the control device [(15)] is adapted to inflate the airbag [(10)] in the event of an accident.

A B S T R A C T

The present invention relates to a runner for a vehicle seat, the runner comprising a male bar and a female bar that are mounted to move relative to each other over a predetermined stroke [(L)], the runner further comprising a detector [(18)] disposed on one of the male and female bars, and a detectable member [(94)] disposed on the other of the male and female bars. The male bar [(9)] is a generally channel section bar including a horizontal web [(91)], the female bar [(8)] is a generally channel section bar including a horizontal web [(81)], and the detectable member is formed by a tab [(94)] that is integral with or secured to the edge [(93b)] of one of the lips [(93)] of the male bar, the corresponding side wall [(8a)] of the second bar [(8)] having an opening [(86)] disposed in correspondence with the detector [(18)] adapted to detect the presence or the absence of the tab [(94)] of the male bar [(9)].

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